Final Degree Project - Faculty of Veterinary Medicine, June 2020

UAB Universitat Autònoma de Barcelona

Postinsemination endometritis in donkey: polymorphonuclear neutrophils (PMN) and their extracellular traps (NETs)

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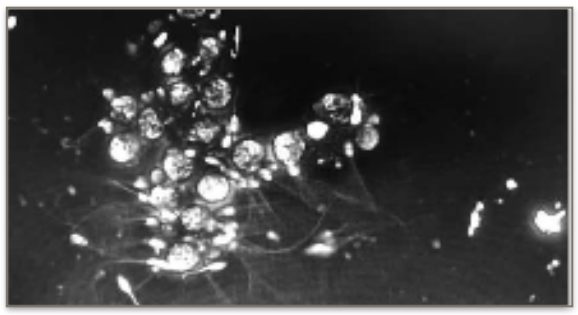
Objectives

The aim of this study is to analyze how the postinsemination endometritis works and to prove the effect of seminal plasma in this reaction.



Spz-PMN interaction creating NETs (Miró 2020)

Material & Methods

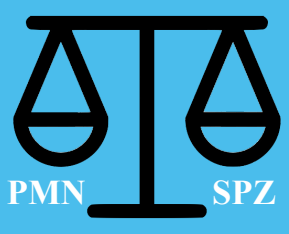
- **Samples:**
  - Sperm from 3 catalan stallion donkeys.
  - Peripheral blood from 3 catalan female donkeys.

Test 1. Effect of sperm concentration in the induction of NETosis.

- 2 experiences (A and B) with samples in different spz concentrations.

A
- Control (PMN)
- 1:1 (PMN/spz)
- 1:10 (PMN/spz)

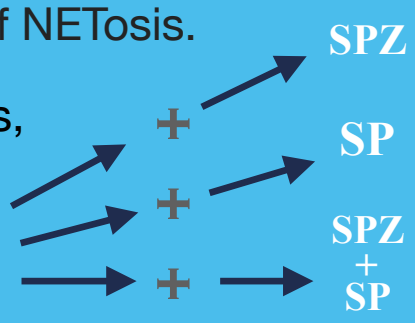
B
- 1:1 (PMN/spz)
- 1:2 (PMN/spz)
- 1:5 (PMN/spz)



- Analysis over a controlled period of time (2, 4 or 6 hours).

Test 2. Effect of the presence of seminal plasma in the induction of NETosis.

- 4 types of PMN samples, with or without SP and Spz.



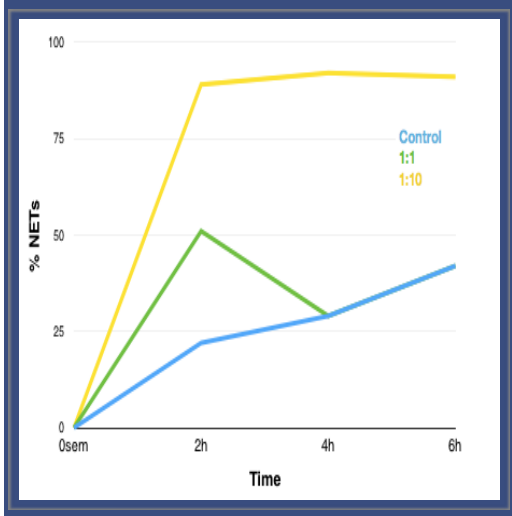
Introduction

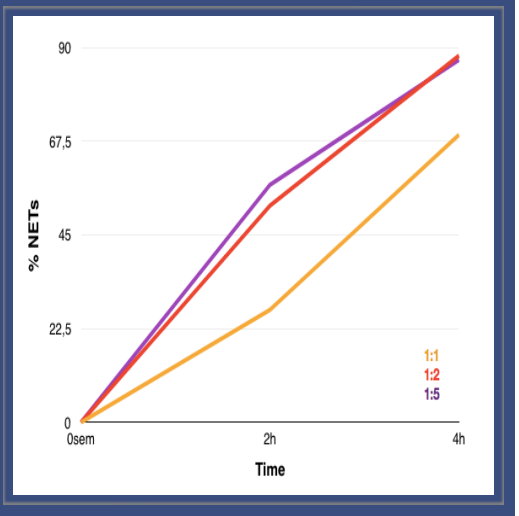
In any inflammatory reaction, the PMN will act against the strange bodies that gets into the organism. This is the case of spermatozoids (Spz). The PMN will start doing fagocytosis or releasing lytic enzymes from their granules. Furthermore, they can set up extracellular traps which will catch the antigens.

It is known that semen also contains a fluid named seminal plasma (SP), this liquid is associated with the regulation of the spermatozoid activation and their metabolism. It can induce cell death while promoting its viability, mobility and quality, depending on still unknown factors.

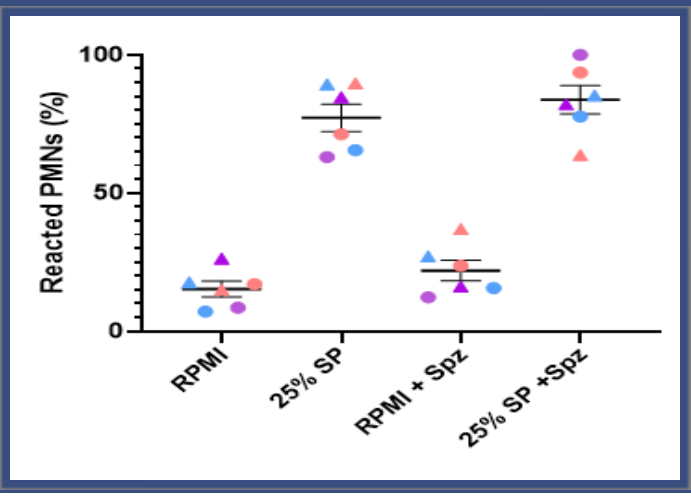
Results

Test 1 (A and B)





Test 2



Conclusions

- The sperm concentration is positively correlated with the percentage of PMN that produces NETosis.
- There appears that the SP can induce NET formation itself.